

| WHMIS | PROTECTIVE CLOTHING | TRANSPORT OF DANGEROUS GOODS |
|---|---|--|
|   |   |  <p>PAINT Class 3 UN1263 P.G.: III</p> |

SECTION I: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Use: Restoration of roof.

Formula number: 553.1

Manufacturer:

Soprema Canada
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Drummondville (Quebec) J2C 5P7
CANADA
Tel.: 819 478-8163

Distributors:

Soprema Inc.
44955 Yale Road West
Chilliwack (B.-C.) V2R 4H3
CANADA
Tel.: 604 793-7100

Soprema USA
310 Quadral Drive
Wadsworth (Ohio) 44281
UNITED STATES
Tel.: 1 800 356 -3521

Soprema Gulfport
12251 Seaway Road
Gulfport (Mississippi) 39503
UNITED STATES
Tel.: 228 701-1900

In case of emergency:

SOPREMA (8:00am to 5:00pm): 1 800 567-1492

CANUTEC (Canada) (24h.): 613 996-6666

CHEMTREC (USA) (24h.): 1 800 424-9300

EMERGENCY OVERVIEW

Black viscous liquid with solvent odour. CAUTION! This product and its vapours are flammable. The vapours are heavier than air and may spread long distances. Distant ignition and flash back are possible. Do not smoke. Adequate ventilation to the outside must be provided. All ignition sources must be eliminated near working area (spark-producing devices or switches, furnaces, all pilot lights).

May cause skin, eye and respiratory tract irritation. Harmful or fatal if swallowed. Can cause severe injury if the product is aspirated by lung during ingestion. Inhalation of high concentrations of this product may cause central nervous system (CNS) depression (headache, nausea, dizziness, drowsiness, incoordination and unconsciousness). Contains xylene which may affect the development of the foetus of pregnant women.

SECTION II: COMPOSITION AND INFORMATION ON DANGEROUS INGREDIENTS

| NAME | CAS # | % WEIGHT | EXPOSURE LIMIT (ACGIH) | |
|------------------|------------|----------|------------------------|-----------------|
| | | | TLV-TWA | TLV-STEL |
| Asphalt | 8052-42-4 | 30-60 | 0.5 mg/m ³ | Not established |
| Oxidized bitumen | 64742-93-4 | 10-30 | 0.5 mg/m ³ | Not established |
| Xylene | 1330-20-7 | 10-30 | 100 ppm | 150 ppm |

SECTION III: POTENTIAL HEALTH EFFECTS

Effects of Short-Term (Acute) Exposure

INHALATION

Inhalation of vapours of xylene can occur while using the product.

Xylene: The main effect of inhaling xylene vapour is depression of the CNS, with symptoms such as headache, dizziness, nausea and vomiting. Volunteers have tolerated 100 ppm, but higher concentrations become objectionable. Irritation of the nose and throat can occur at approximately 200 ppm after 3 to 5 minutes. Exposures estimated at 700 ppm have caused nausea and vomiting. Extremely high concentrations (approximately 10 000 ppm) could cause incoordination, loss of consciousness, respiratory failure and death. Reversible liver and kidney damage has been reported in cases of severe xylene exposure. Results of short-term studies on human volunteers indicate that xylenes can cause neurobehavioral effects such as impaired short-term memory and reaction time (300 ppm mixed xylenes, with exercise) and alterations in body balance (65 to 400 ppm m-xylene). (1)

Asphalt: Exposure is not expected by this route of entry under normal product use.

SKIN CONTACT

Frequent or prolonged contacts can remove the natural fat from the skin and may cause redness, skin irritation and dermatitis.

Xylene: Studies have shown irritation, redness and a burning sensation can result from contact. These effects are reversible shortly (usually

within 1 hour) after the contact stops. Xylene liquid or vapour can be absorbed through the skin, but not as readily as when inhaled or ingested. Significant harmful effects are not expected by this route of exposure. (1)

Asphalt:

Asphalt may cause irritation to the skin. (2)

EYE CONTACT

The vapours may cause eye irritation with tearing and discomfort, redness and pain. Eye contact with the product may cause moderate irritation.

Xylene: According to the results obtained of animal studies, the liquid is probably a mild irritant. Eye irritation has been reported at a vapour content of only 200 ppm. Corneal vacuoles (pockets of fluid or air inside the cornea) have been reported after exposure at unknown concentrations of vapours. This effect proved to be reversible in 8 to 11 days on 7 of 8 workers. (1)

Asphalt: Exposure is not expected by this route of entry under normal product use. (2)

INGESTION

It is unlikely that toxic amounts of this product would be ingested with normal handling and use. (1)

Xylene: Based on animal information, xylene is only slightly toxic by ingestion. Ingestion of large amounts is likely to cause CNS effects such as dizziness, nausea and vomiting. (1)

Asphalt: No information available.

SKIN CONTACT

Xylene: Repeated contact can produce dermatitis (dryness and cracking) due to degreasing action. (1)

Asphalt: Repeated or prolonged contact may cause irritation. (2)

INHALATION

Xylene: See effects described below.

Asphalt: Exposure is not expected by this route of entry under normal product use.

NERVOUS SYSTEM EFFECTS

Xylene: Long-term xylene exposure may cause harmful effects on the CNS, but there is not enough information available to draw firm conclusions. Symptoms such as headaches, irritability, depression, insomnia, agitation, extreme tiredness, tremors, and impaired concentration and short-term memory have been reported following long-term occupational exposure to xylene and other solvents. This condition is sometimes generally referred to as "organic solvent syndrome". (1)

LIVER AND KIDNEY EFFECTS

Xylene: A number of case reports and occupational studies have suggested that liver and kidney damage may result from long-term occupational exposure to xylene. However, it is not possible to attribute these effects directly to xylene exposure because generally there was exposure to other chemicals at the same time, particularly other solvents, and there was no information provided on the exposure levels or duration of exposure. In a recent study, 175 employees were exposed to a mean xylene concentration of 21 ppm for an average of 7 years. Liver and kidney effects were not reported. Xylenes accounted for greater than 70% of the total exposure. (1)

CARCINOGENICITY

Xylene: The International Agency for Research on Cancer (IARC) has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3). The American Conference of Governmental Industrial Hygienists (ACGIH) has designated this chemical as not classifiable as a human carcinogen (A4). The US National Toxicology Program (NTP) has not listed this chemical in its report on carcinogens. (1)

Asphalt: IARC has concluded that this chemical is not classifiable as to its carcinogenicity to humans. Epidemiological studies on roofers have generally showed an excess of lung cancer on these workers. Therefore, it is not clear to which extent these cancers can be attributable to the exposures to asphalt during roofing works, because in the past, roofers were exposed to coal tar and asbestos, which are known carcinogenic for the lungs of humans. Traces of polynuclear aromatic hydrocarbons (PAH) can be present in some kinds of asphalts and can be released by excessive heating. Some of these PAH have been identified as having the potential to induce carcinogenic effects, and on the reproductive health. (2)

Oxidized asphalt: In October 2011, IARC conducted a review of the potential carcinogenicity of bitumen (the European term for asphalt). One of its conclusions was "occupational exposures to oxidized bitumen and their emissions during roofing" are classified in IARC Group 2A, "probably carcinogenic to humans". Exposure is not expected by this route of entry under normal product use.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

Xylene: Several human population studies have suggested a link between exposure to organic solvents (including xylene) and increased occurrence of miscarriages or birth defects in children. However, no conclusions can be made on the effects of exposure to xylenes on the unborn child because of the inadequacy of the available information. Xylene (mixed isomers) has produced fetotoxic effects (delayed ossification and behavioural effects) in animals, in the absence of maternal toxicity. Animal information suggests that xylenes are not teratogenic or embryotoxic at exposure levels that are not harmful to the mother. (1)

Asphalt: No information available.

REPRODUCTIVE TOXICITY

Xylene: An increase in menstrual disorders has been reported in women exposed to organic solvents such as benzene, toluene and xylene. It is not possible to attribute these effects to xylene in particular. The limited animal information available suggests that xylene does not cause reproductive effects. (1)

MUTAGENICITY

Xylene: There have been a few studies investigating the mutagenic potential of mixed xylenes in workers exposed occupationally to these solvents. No conclusions can be drawn because of limitations such as small study populations and exposure to other chemicals at the same time. (1)

TOXICOLOGICALLY SYNERGISTIC MATERIALS

Xylene: Exposure to related solvents, such as benzene, toluene and ethanol (alcohol) slows the rate of clearance of xylene from the body, thus enhancing its toxic effects. Exposure to xylene in combination with other solvents has had an additive effect with respect to harming the hearing of rats. (1)

POTENTIAL FOR ACCUMULATION

Xylene: The three xylene isomers are readily absorbed by inhalation and ingestion and are widely distributed throughout the body. A small amount may be absorbed through the skin. Xylene is largely broken down by the liver and most of the absorbed material is rapidly excreted in the urine as breakdown products. Small amounts are eliminated unchanged in the exhaled air. There is low potential for accumulation. (1)

SECTION IV: FIRST AID MEASURES**SKIN CONTACT**

Remove contaminated clothing. Wash thoroughly with soap and water. If irritation persists, get medical attention.

EYE CONTACT

Flush thoroughly with water for at least 15 minutes. If irritation persists, get medical attention.

INHALATION

In case of gas or vapour inhalation, move victim to fresh air. If breathing is difficult, give oxygen. If breathing stops, give respiratory assistance. Obtain medical assistance.

SWALLOWING

Do not induce vomiting. Immediately contact local poison control centre. Should vomiting occur, be sure to keep the victim's head below hips to avoid aspiration of vomit into the lungs. Maintain the victim at rest and obtain immediate medical attention.

SECTION V: FIRE-FIGHTING MEASURES

FLAMMABILITY: Flammable Class 1C (NFPA)

EXPLOSION DATA: Sensitivity to mechanical impact: No
Sensitivity to static charge: Can accumulate static charge by flow.

FLASH POINT: 23°C (ASTM D-93)

AUTO-IGNITION TEMPERATURE: 527°C (xylene)

FLAMMABILITY LIMITS IN AIR: (% in volume) 1 – 7 (xylene)

FIRE AND EXPLOSION HAZARDS

This product and its vapours are easily ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours are heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. The product may explode or ignite on contact with strong oxidizing agents. Do not cut, puncture or weld empty containers.

COMBUSTION PRODUCTS

Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion. Toxic and/or irritating gases or fumes can emanate from empty containers when submitted to high temperatures: CO, CO₂, Aldehydes, ketone, acrolein, halogenated compounds.

FIRE FIGHTING INSTRUCTIONS

Evacuate area. Wear self-contained breathing apparatus and appropriate protective clothing in accordance with standards. Approach fire from upwind and fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Always stay away from containers because of the high risk of explosion. Stop leak before attempting to put out the fire. If leak cannot be stopped, and if there is no risk to the surrounding area, let the fire burn itself out. Move containers from fire area if this can be done without risk. Cool containers with flooding quantities of water until well after fire is out.

MEANS OF EXTINCTION

Anti-alcohol or universal foam, CO₂, dry chemical powder, sand. Use of water spray when fighting fire may be inefficient because of the low flash point of the product.

SECTION VI: ACCIDENTAL RELEASE MEASURES

RELEASE OR SPILL

Ventilate area. Wear appropriate protective equipment during cleanup. Eliminate all sources of ignition. Shut off source of leak if you can do it without risk. Contain the spill. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Sweep or shovel into containers with lids, use clean non-sparking tools to collect absorbed material. Cover and remove to appropriate well ventilated area until disposal. Do not touch or walk through spilled material. Wash spill area with soap and water. Prevent entry into waterways, sewers, basements or confined areas. Dispose of this product according to the local environmental regulations.

SECTION VII: HANDLING AND STORAGE

HANDLING

This product and its vapours are flammable and toxic. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing mist, vapour or dust. Wash thoroughly after handling. Before handling, it is very important that ventilation controls are operating and protective equipment requirements are being followed. People working with this product would be properly trained regarding its hazards and its safe use. Eliminate all ignition sources (e.g. sparks, open flames, hot surfaces). Keep away from heat. Ground transfer containers to avoid static accumulation. Tightly reseal all partially used containers. Do not cut, puncture or weld empty containers.

STORAGE

Store in a cool well-ventilated area out of direct sunlight and away from heat and ignition sources. Keep storage areas clear of combustible materials. No smoking near storage area. Store away from incompatible materials. Store the product according to occupational health and safety regulations and fire and building codes. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment near storage area. Inspect all containers to make sure they are properly labelled.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

HANDS: Wear gloves made from polyvinyl alcohol (PVA) or viton.

RESPIRATORY: If the TLV is exceeded, if use is performed in a poorly ventilated confined area, use an approved respirator in accordance with standards.

EYES: Wear chemical safety goggles in accordance with standards.

OTHERS: Eye bath and safety shower.

CONTROL OF VAPOURS: Local exhaust is needed to control vapour and dust level to below recommended limits.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:

Viscous liquid

ODOUR AND APPEARANCE:

Black liquid with solvent odour

ODOUR THRESHOLD:

Not available

VAPOUR DENSITY (air = 1):

Heavier than air

EVAPORATION RATE (Butyl acetate = 1):

0.7 (xylene)

BOILING POINT (760 mm Hg):

Not available

FREEZING POINT:

Not available

SPECIFIC GRAVITY (H₂O = 1):

1.06 kg/L

SOLUBILITY IN WATER (20°C):

Insoluble

VOLATILE ORGANIC COMPOUND (V.O.C.) CONTENT:

205 g/L

VISCOSITY:

30 000 cP

SECTION X: STABILITY AND REACTIVITY

STABILITY: This material is stable.

CONDITIONS OF REACTIVITY: Avoid excessive heat.

INCOMPATIBILITY: Basis, acids and strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: None identified.

HAZARDOUS POLYMERIZATION: None

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

Xylene: (1)

LC₅₀ (rat): 6 350 ppm (4-hour exposure) (unspecified isomers and ethylbenzene)

LD₅₀ (oral, rat): 5 400 mg/kg

LD₅₀ (dermal, rabbit): 12 180 mg/kg; greater than 1 700 mg/kg

Asphalt: Not available.

Effects of Short-Term (Acute) Exposure

INHALATION

Xylene: The major effect of xylene inhalation is on the CNS. There is initial excitation followed by depression, drowsiness, incoordination and unconsciousness at approximately 2000 ppm. Death at higher concentrations is from respiratory failure due to CNS depression and/or accumulation of fluid in the lungs (pulmonary oedema). Irritation of the respiratory tract, causing a decrease in the respiratory rate, has been reported. This concentration is expected to produce intolerable eye, nose and throat irritation (sensory irritation) in humans. Behavioural effects such as effects on learned behaviours and avoidance conditioning have been observed in animals following short-term inhalation. Hearing loss, mainly at mid-frequencies, has been observed in rats following short-term exposures (800 ppm and above for 6 weeks or 1450 ppm for 3 days) to xylene. A no-effect level was not determined and reversibility was not assessed. (1)

Asphalt: No information available.

EYE IRRITATION

Xylene: Application of xylene caused mild irritation and very slight, transient corneal damage in rabbits. (1)

Asphalt: No information available.

SKIN IRRITATION

Xylene: A single application of an unspecified amount of xylenes caused irritation and swelling in rabbits and guinea pigs. Application of 0.5 ml of the xylene mixture to rabbit skin for 24 hours caused moderate irritation. Repeated application, 10-20 times over a 2 to 4 week period, of xylenes to rabbit skin caused moderate to marked irritation, swelling and tissue death. (1)

Asphalt: No information available.

Effects of Long-Term (Chronic) Exposure

TARGET ORGANS

Xylene: Animal studies have provided little evidence of damage to the liver, kidney or lungs, nor any other significant long-term health effects following long-term inhalation. (1)

Asphalt: No information available.

CARCINOGENICITY

Xylene: IARC has determined that there is inadequate evidence for carcinogenicity of xylene in animals. (1)

Asphalt: No information available.

REPRODUCTIVE EFFECTS

Xylene: No harmful reproductive effects were noted in animal studies. (1)

Asphalt: No information available.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

Xylene: In three studies, fetotoxic effects (delayed ossification and behavioural effects) were observed in the offspring of rats exposed by inhalation to 500 ppm mixed xylenes (with up to 20% ethylbenzene). In another study, fetotoxicity (decreased weight) was observed in the female offspring of rats exposed to up to 500 ppm of mixed xylenes (12.8% ethylbenzene). No signs of maternal toxicity were observed in these studies. In other studies where rats and mice were exposed by inhalation or ingestion, harmful effects in the offspring (teratogenicity, embryotoxicity or fetotoxicity) were either not observed or were observed in the presence of significant harmful effects in the mothers. (1)

Asphalt: No information available.

MUTAGENICITY

Xylene: Negative results have been consistently obtained in a variety of studies using live animals and cultured cells. (1)

Asphalt: No information available.

SECTION XII: ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS

Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams, or public waterways. Block off drains and ditches. Provincial and federal regulations may require that environmental and / or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life.

SECTION XIII: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

This product is listed as hazardous waste. Consult local, state, provincial or territory authorities to know disposal methods. Also listed as hazardous waste by the RCRA (USA); waste disposal as to follow EPA regulations. Do not dispose of waste with normal garbage or sewer systems.

SECTION XIV: TRANSPORT INFORMATION

CLASSIFICATION (TDG - DOT): Class 3

IDENTIFICATION NUMBER: UN 1263

SHIPPING NAME: Paint

PACKING GROUP: III

CONTAINERS ARE IN CONFORMITY WITH STANDARDS.

SECTION XV: REGULATORY INFORMATION

WHMIS

B2: Flammable liquid (flash point lower than 37.8°C).

D2A: Very toxic material causing other effects (xylene has teratogenicity and embryotoxicity effects).

D2B: Toxic material causing other effects (asphalt and xylene have irritant effects).

DSL: All constituents of this product are included on the Domestic Substances List (DSL – Canada).

TSCA: All constituents of this product are included on the Toxic Substances Control Act Inventory (TSCA – United States).

| HMIS (USA): | | NFPA (USA): | |
|----------------------|---|-----------------|---|
| Health | 2 | Health | 2 |
| Flammability | 3 | Flammability | 3 |
| Physical risk | 0 | Instability | 0 |
| Protective equipment | B | Specific hazard | - |

SECTION XVI: OTHER INFORMATION

GLOSSARY

| | |
|---|---|
| ANSI: | American National Standards Institute |
| ASTM: | American Society for Testing and Materials |
| CAS: | Chemical Abstract Services |
| CSA: | Canadian Standardisation Association |
| DOT: | Department of Transportation (United States) |
| EPA: | Environmental Protection Agency (United States) |
| HMIS: | Hazardous Material Information System |
| LD₅₀/LC₅₀: | Less high lethal dose and lethal concentration published |
| NFPA: | National Fire Protection Association (United States) |
| OSHA: | Occupational Safety & Health Administration (United States) |
| RCRA: | Resource Conservation and Recovery Act (United States) |
| TDG: | Transportation of Dangerous Goods |
| TLV-TWA: | Threshold Limit Value – Time-Weighted Average |
| WHMIS: | Workplace Hazardous Materials Information System (Canada) |

References:

- (1) CHEMINFO (2013) Canadian Centre of Occupational Health and Safety, Hamilton (Ontario) Canada
- (2) Material Safety Data Sheet of the supplier.

Code of MSDS:

CA U DRU SS FS 038

For more information:

1 800 567-1492

The Material Safety Data Sheets of SOPREMA Canada are available on Internet at the following site: www.soprema.ca

Justification of the update:

- Triennial update.

This MSDS contains all the information required by ANSI Z-400.1-1998 standard (United States), by regulation 29 CFR Part 1910.1200 of the Hazard Communication Standard of OSHA, and is in accordance with standard DORS/88-66 OF WHMIS Canada.

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.